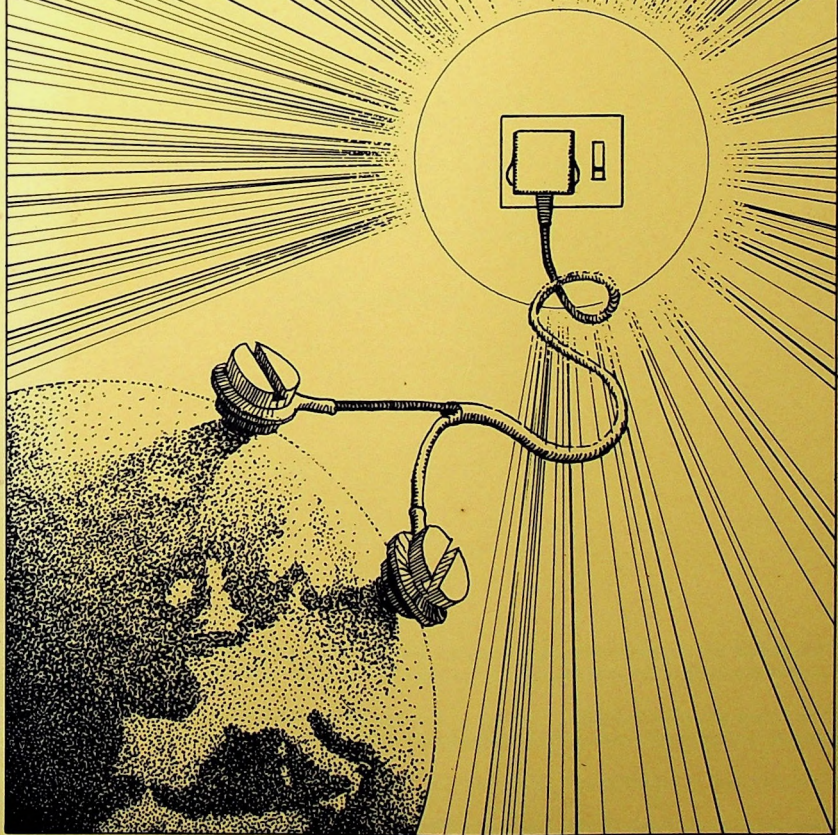


POWER PACK

Safe Energy for a Sustainable Society



POWER PACK

Safe energy for a sustainable society

1. ENERGY AS A NATURAL RESOURCE

Society is totally unprepared for the exhaustion of its energy supplies. The signs have been with us for a decade, and have been completely ignored. We still have no thought for the consequences of our profligacy. The apathy and unconcern with which we approach the final depletion of energy resources can be compared to the casualness with which we look over the nuclear abyss. The Ecology Party is the **only** party that has policies to enable society to exist in a world of vanishing fossil fuel resources.

Vast and ever-increasing amounts of energy are necessary to sustain the wealthy, industrial, producing and consuming societies of the northern hemisphere. Until recently, the planet seemed to be so huge that its resources were assumed to be infinite. The only constraints on an ever-increasing creation of wealth were the will and the technology to do it; and in recent decades the will and the technology have become more and more effective.

So, this century, the rate of resources depletion has risen astronomically. This has enabled the people of the north to enjoy an ever-increasing consumption of material goods which, in conventional terms, is taken to mean an ever-increasing standard of living.

However, people are beginning to recognise the fact that resource supplies are finite. They are recognising that an ever larger consumption of resources to make ever larger quantities of material goods for ever greater numbers of people will bring the final depletion of those resources ever closer. Concerned scientists are revising their estimates of depletion times always downwards, to 30, 20, even 15 years for some. And still the conventional political parties will not recognise the importance of slowing down the rate of mineral extraction — they will not even recognise that there is a problem.

The Ecology Party not only recognises the full seriousness of the problem, it also has proposals and policies to enable us to change from being a profligate, wasteful society to a conserving, sustainable society, and to enable us to make that necessary change with as little disruption as possible.

The Ecology Party's economic theories enable us to understand the causes of recession, inflation, unemployment in terms of resources depletion. Let us assume that society is unconcerned about the environmental effects of its drive for wealth — about desertification, species extinction, lead levels, cancer caused by ionising radiation, acid rain, about pollution in its many guises. Let us assume that society is unconcerned about the effects of its pursuits of wealth on the Third World, by wastefully, thoughtlessly, using more and more resources desperately needed by the poor for survival. Let us assume that society is unconcerned that, by behaving as we do, we will leave nothing but a used-up hulk of a planet for our children. What society **does** care about is the fact that, as resources become scarcer, they become more expensive. When raw materials become more expensive, inflation sets in. Following inflation comes recession, following recession comes mass unemployment and all the social tensions which come with it. Following mass unemployment and recession, allowed to continue unchecked, surely comes the breakdown of the fabric of society.

The Ecology Party is the only party to recognise that society's objective of ever-increasing wealth contains within it the seed of society's own end. It is the only party to recognise that the only way off the downward spiral is to begin at the beginning, and to re-examine the way in which we exploit our resources. It is no longer possible to have a society whose main objective is the simple accumulation of material wealth. The Ecology Party is in the business of building a society whose objectives are a little broader — broad enough to embrace a concern for, and confidence in, its own future.

2. THE ENERGY GAP

An energy gap, or crisis, is caused by a shortage of primary fuels: by energy demand exceeding energy availability. Consumption of primary energy fuels in 1977, measured in million tonnes of coal equivalent (mtce) was

Coal	122
Oil	137
Gas	63
Nuclear & hydro	16
Total energy use	322
Non-energy uses	28
TOTAL	360

The Department of Energy estimates the availability of primary fuel supplied in 1990 and 2000 to be

	1990	2000
Oil	153	100
Coal	127 — 138	137 — 155
Gas	68 — 71	62 — 65
TOTAL	348 — 362	299 — 320

Thus there will be, according to the Department of Energy, a small but significant reduction of energy availability of a maximum of 12 mtce in 1990 and 61 mtce in 2000, assuming a coal/oil/gas scenario and present consumption levels.

The Ecology Party disagrees with the Department of Energy on two essential counts. Firstly, the Department of Energy assumes an overall increase in energy demand and, secondly, it discounts any sizeable contribution by renewable resources and by increased energy efficiency.

The Department of Energy assumes an increase in demand because it takes the increase experienced between 1953-1973 and projects that increase into the future. In fact, energy consumption since 1973 has remained fairly constant at around 360 million mtce a year. The steep rise in the price of oil in 1973 leading to an increased emphasis on efficiency and conservation, the slow movement away from energy-intensive manufacturing industries to service industries, and the failure to achieve significant economic growth, have all been factors leading to a static pattern of energy demand. Fuel consumption in 1977 was less than in 1970, and total energy consumption during 1980 was 7-11% lower than the consumption during 1979.

Department of Energy projections of energy demand have been steadily falling off in recent years, as it becomes obvious that the levelling off in demand since 1973 can no longer be regarded as a temporary factor. The CEEB, as the authority responsible for estimating future electricity demand and ordering the necessary plant, has come in for criticism from the Monopolies Commission. The commission found that the CEEB's demand forecasting has been "seriously inaccurate" in the past, leading to premature, and by implication unnecessary, orders. Inevitably this inaccuracy is reflected in increased electricity bills — these bills will get even bigger if the proposal of the present government to build ten new and totally unnecessary nuclear power stations in the coming decade is carried out.

Whatever the forecasts, whatever the estimates, it is obvious that, using present methods of making energy, there will be an energy crisis sometime. For as long as we persist in thinking about energy solely in terms of digging something out of the ground and burning it, a shortage is inevitable. Indeed the shortage is already apparent, most obviously in the case of oil, and is being reflected in increased energy prices to industry and to the domestic sector, and consequently in continuing inflation. The Ecology Party's fundamental disagreement with the Department of Energy concerns the method and techniques necessary to prevent that shortage worsening into crisis.

The Department of Energy's only significant proposal to solve the problem of the energy gap is a massive investment in nuclear power. The proposed ten new nuclear power stations will, at a cost of £1500 m each, contribute between 3.5 - 7 per cent of our total energy needs. There are many urgent, literally vital, reasons why this programme must not go ahead*, but the greatest irony is that they use as primary fuel a substance — uranium — that will be depleted even faster than those fuels it is designed to replace. It is estimated that, if nuclear power stations are built world-wide on the scale now planned, uranium resources will be depleted in 25 years. In addition, coal, oil and gas are found in this country: dependence on imported uranium places us at the mercy of international political uncertainties, and forces us into a morally disgraceful position over Namibia, which is the source of much of our uranium.

The Fast Breeder Reactor, designed to use plutonium (the 'waste' from conventional reactors) as fuel, has been proposed as the nuclear answer to the uranium shortage. The FBR operates at such high burn-up temperatures, at the very limits of its components, that there is no possible margin for error. The only coolant that will work at such temperatures is liquid sodium — chemically explosive in contact with air or water. The reprocessing of FBR fuel presents its own enormous problems, and has yet to be attempted on a commercial scale. In the US, development of the FBR has been stopped by presidential order.

Electricity consumption accounts for about 12.5 per cent of total energy use. At present, nuclear power contributes 13 per cent to the grid, or about 2 per cent of total energy used. If the plans for the coming decade go ahead, that 2 per cent will increase to a maximum of 7 per cent, assuming optimistic growth in electricity consumption. To spend so massively, on a technology so dangerous, for such a small effect on one sector of energy use, defies comprehension.

*See section 3 (ii)

3. THE SOLUTION — EFFICIENCY

If our sources of energy are becoming scarcer, more difficult to exploit and more expensive, and if eventually they will run out altogether, then the simple, obvious solution is to use sources of energy that will not run out — to use renewable sources of energy. These are becoming familiar to the general public and the technical problem of commercial exploitation are beginning to be solved. Had renewable energy received a fraction of the money devoted so wastefully to nuclear power, these problems would be very much nearer solution, and techniques exist now to enable them to make a large contribution to our energy needs. They include energy from the sun, wind, tide and waves, hydro-electricity and heat pumps. They are sources of energy that will not run out and, long-term, they are the **only possible** way to ensure our energy supplies.

Until such time as we are able to draw our energy from these supplies, it is equally obvious that we **must** use our present, non-renewable, supplies as efficiently as possible. This concept is also becoming better known to the public, and both simple and sophisticated techniques to make **large savings** are now available. Energy efficiency, or conservation, can and must become our **single largest** source of energy by the turn of the century. As Sir Martin Ryle, the Astronomer Royal, said:

"Since the capital cost of a nuclear power station, if spent instead on the saving of energy now wasted, would save some three times more energy than the station would produce in its lifetime, programmes for insulating buildings, improving the efficiency of industrial and other machinery should clearly have priority. The techniques involved are nearly all well-established, are labour intensive, and would provide employment over a wide range from the unskilled, to the electrical machine tool and other industries, to sophisticated control engineering. With a shorter time scale for installation than any nuclear programme, we could start saving energy **now**".

ENERGY EFFICIENCY — Heat

About 60% of all energy used in the UK produces heat, well over half of which is for water and space heating of under (often well under) 80° C.

Energy consumption by end-use

Low temperature heat (under 80° C)	34.8
High temperature heat (over 80° C)	25.0
Essential electricity*	8.1
Transport	21.2
Non-energy use **	11.0

*Lighting, machinery, electrochemicals etc.

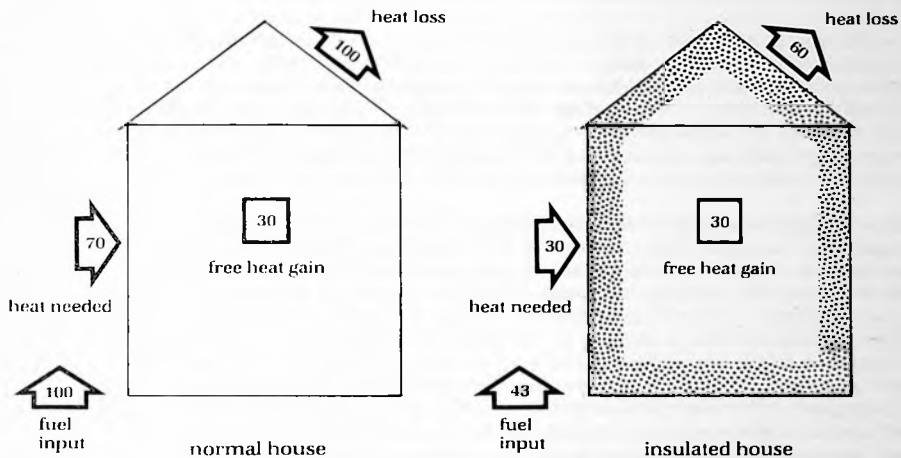
**Chemical feedstocks, lubricating oils, international shipping etc.

Source — 'A Low Energy Strategy for the United Kingdom' by Gerald Leach et. al. Published by IIED Science reviews.

Excluding the specialised sectors of transport and non-energy uses (specialised because they depend entirely on oil), over half of all energy used is for low temperature heat. It is **precisely** this area which is most obviously, cheaply and dramatically affected by an energy conservation programme.

The simplest and most effective single technique is the insulation of buildings. In the industrial sector the savings would be huge, partly because it is the **largest** energy consuming sector, accounting for about 40% of all energy used, and partly because the opportunities for heat saving in most factory buildings are so great. The opportunities in the commercial and institutional sector are equally dramatic, partly because the presence of large numbers of people, together with good design of buildings can, and in some modern buildings does, make any space heating unnecessary. The domestic sector is perhaps the most familiar and serves best to illustrate the detailed savings possible.

Housing consumes 30% of our total energy, of which 85% is for low-temperature water and space heating. And yet over 6 million homes in the UK have no loft insulation, and only 1/2 million have cavity wall insulation. The heat savings from insulation are more dramatic than is at first apparent. Wall and roof insulation reduces the heat loss through the fabric by 40% — from 100 units to 60 units. So the necessary energy input is 60% of that for an uninsulated house. But because the “free heat gains” from lighting, cooking, the inhabitants etc. are themselves more efficiently retained, the overall energy input figure is reduced to 43% of that necessary for an uninsulated house.



The cost of insulation would vary on the size and location of the dwelling, but a figure of £400-£600 is a top estimate. This figure is certainly beyond the easy reach of most people, and government help would be needed. A nationwide insulation scheme would not only save energy, but also provide employment for thousands for perhaps 10 years. But the present Government, immediately after taking office in May 1979, cut by half the money available for grants towards the insulation of private houses, and abandoned central government funding for council home insulation.

The Ecology Party would initiate a nationwide building insulation scheme, organised along the lines of the recent North Sea Gas conversion programme. The objective would be a saving of 35% of low-grade heat used in the domestic sector, 45% in the industrial sector and 60% in the commercial and institutional sector. (See Appendix).

There are many other methods of reducing the enormous low-grade heat component of our energy consumption. Techniques of recycling heat through heat exchangers are well-established and in mainly industrial and large-scale applications, can be 65% efficient. Heat-pumps are more applicable to the domestic sector, and well-proven. They are identical in principle to the cooling systems of refrigerators, which take heat from inside the refrigerator and dump it, slightly warmed, into the surroundings. Although energy is needed to drive the motor, good design can ensure that the heat energy output is double or treble the energy input. The heat pump is inherently energy efficient because, instead of using heat from a boiler or furnace at several hundred degrees, and then diluting that to low-grade heat — climbing the mountain to reach the foothills — the heat pump generates heat at the lowest acceptable temperature, climbing only the foothills.

On a larger scale Combined Heat and Power schemes are popular on the continent although in Britain, except at Battersea, almost unknown. CHP makes use of the fact that electricity generating stations are only 30-35% efficient — the remaining 65-70% of the energy is wasted in the cooling water. This is true of all methods of electricity generation, whether coal, oil or nuclear. A CHP station generates electricity in the usual way, and additionally recovers a good proportion of the waste heat as water at 70-90° C, and uses this for district heating in the vicinity of the station. The techniques are well-established and, although the electricity generating efficiency of the station is slightly reduced, its overall efficiency climbs to around 70%. Currently in the UK there is little encouragement to build CHP stations in the public sector, although some help is available for their establishment in large industrial complexes. (See Appendix).

Another source of district heating is urban waste incineration, and this is another example of the possible use of "free" heat sources. Large-scale schemes at Nottingham, and at Edmonton in North London, are already working, the latter disposing of 1,333 tonnes of solid refuse daily. If all the UK's million tonnes per year of refuse were incinerated in such a way, 20-25% of the domestic sector's space and water heating requirements could be met. Practical constraints of collection, treatment and delivery would reduce this figure to a smaller but still significant figure — political apathy, as usual, reduces the figure almost to zero.

As oil and gas production levels fall off due to depletion, we will inevitably return to coal, and hopefully to an examination of more efficient methods of coal use. One such method being tried by the NCB is fluidised bed combustion, and this technique is applicable to all sectors of the market, from the very large industrial and power generating, to the domestic. A fluidised bed system contains a bed of incombustible material on a perforated plate, through which air is blown to keep the bed in motion, or fluidised. Boiler tubes are immersed in the bed. Coal is dropped on to the bed, and burned at high efficiency, and ash is recovered at a rate to keep the total volume of the bed constant. The system is more efficient than a conventional boiler because of the good heat transfer to the boiler tubes, and a rapid combustion rate. Fluidised bed units can burn very low grades of coal, even slag, that would otherwise be difficult to dispose of. Sulphur and nitrogen oxide pollution can be greatly reduced by adding an absorbent material such as limestone to the bed. Efficiency, even with domestic-scale units, can reach 85%.

ENERGY EFFICIENCY — Electricity

In January 1978 the total capacity of all UK electricity supply stations was 67.2 GW (million kilowatts), but maximum peak demand was 49.7 GW. Despite this 35% over-capacity, and despite demand remaining at, or slightly below, 1973 levels, an additional 15.8 GW is under construction or being commissioned. Incredibly, a further 15GW of nuclear plant is planned for the next decade. Capacity is increasing in huge, expensive strides, to meet an expected, or hoped for, increase in consumption that has failed to materialise.

Yet the official solution to our future energy problems seems to be that we become an all-electric society, and build lots of nuclear power stations. The catastrophic history of nuclear power, and the results of the insidious, invisible poisons that it produces, have been fully documented elsewhere*. Briefly, the arguments against nuclear power fall into the following categories:

Radiation — the everyday operational radioactivity released into the environment. Ionising radiation causes cancer and genetic mutation. Recent research has shown that there is no safe level of exposure to it, and therefore the concept of 'safe limits', central to the operation of nuclear stations and the supposed protection of the general population from danger, is invalid.

Man-made radiation has the property of becoming concentrated in the food chain, as does DDT and certain other toxic chemicals. For example, plutonium is found to be 1,000 times more concentrated in fish, as compared to the background water concentration. A further increase in concentration occurs in the man who eats fish. The increase in cancer at Cherbourg (Cotreville and Cap de la Hague plants) between 1971 and 1979 was 165 per cent **excluding** leukemia. The increase in child leukemia at Bremen (Lingen reactor) has risen 600 per cent since the plant was installed. In North Lancashire (Windscale) myeloid leukemia has almost doubled in ten years.

Wastes — There is no acceptable method of waste disposal — in the UK high-active wastes are stored in cooling ponds at Windscale, low-level wastes are dumped at sea. Plutonium is one by-product of nuclear electricity generation (or more accurately, electricity is one by-product of plutonium manufacture). The plutonium that is not required by the military is stored at Windscale. It is planned to store it there for the next 240,000 years, that being its active life. It is the most dangerous poison known to man — one millionth of one gram is fatal. The same speck of plutonium is capable of causing death through 10,000 generations. At Windscale, in the year 1976-1977, 16 kilogrammes of plutonium were 'unaccounted for'.

Nuclear power was invented to supply the military with plutonium for bombs. It still does so. Without nuclear power, there is no plutonium. Without plutonium, there are no nuclear weapons. The two fields, civil and military, are inextricably linked. For this reason, the cancellation of the civil nuclear programme would be a step towards peace.

Accidents — The safety records of the AGR and the PWR have never been released, although requested by Parliament. British accidents have included: 1957, fire at Windscale — reactors one and two closed and filled with concrete, 500 square kilometers contaminated with iodine-131. 1973, ruthenium-106 blowback contaminated 30 workers, the plant affected, 4 years old, was closed for good. 1976, leak at Windscale from a waste silo — 20,000 gallons escaped. 1979, fire in the fuel de-canning cave — 8 workers contaminated and the area closed for four months. 1979, another leak was discovered at Windscale which had gone undetected for four years — the Health and Safety executive's report on this one was 'the strongest attack ever made on a public utility'. Windscale doesn't have a very good record — but the list of near misses and minor accidents at the reactors is too long to list. All the Magnox reactors have at one time been closed down because of pipe cracks or faulty welding. Hinkley Point has suffered both fire and flood; Hunterston flooded 'inexplicably' in 1977. So far, the worst accidents have been in the US — Three Mile Island in 1979, and Idaho Falls in 1961, where the three men who died were so radioactive that they were each cut in half; one half buried in lead-lined coffins, the other half incarcerated in the ruined reactor which was then sealed for ever.

Cost — The price the taxpayer pays for the benefits of nuclear power are of course enormous. Cost of overruns of 100 - 400 per cent are being experienced with the AGR programme. Each station requires 200 acres of flat building land, good access, and plentiful water. They also must be remote. Not only are our coasts being destroyed, but our countryside is being vandalised by the necessary pylons. The Commons Select Committee reported in March 1981 that the nuclear power programme has resulted in a 'serious net economic loss'.

For these and other similar reasons, the Ecology Party is totally opposed to nuclear power. In addition, we are a decentralist party. A power generation method that is so expensive, so incomprehensibly technical, so centrally organised, so elusive of democratic control, so elitist, so male-dominated, so thoughtlessly, massively exploitative of resources — such a system mirrors precisely those areas in our society most in need of ecological change.

In addition to the immediate cancellation of the nuclear programme, the Ecology Party believes that the requirements of the national grid can best be met, in the short to medium term, by the establishment of a network of medium-sized coal burning (possibly using fluidised bed technology) stations, wherever possible working as CHP stations. This can be most economically achieved by converting existing suitable (i.e. urban) stations to CHP, and by replacing retiring plant by stations of this type. (See Appendix).

ENERGY EFFICIENCY — OIL

At present oil provides 48.3% of our energy. Surprisingly perhaps, the transport sector consumes only 21.2%. The essential use of oil for non-energy purposes — the manufacture of chemicals, feedstuffs, lubricating oils etc. — accounts for 11% and once again heating, predominantly low-grade, accounts for the remaining 16.1%. One third of the oil used in this country provides heat. In order to preserve as much oil as possible, for as long as possible, for non-energy uses, the use of oil for heating must be made more efficient by use of the techniques outlined above. In addition, the Ecology Party believes that the use of both electricity and oil for low-grade heating should be actively discouraged.

However, the use of oil for transport must be carefully examined and made as efficient as possible. Growth in energy use by transport has been huge. Since 1958 it has accounted for half the total increase in UK energy consumption. In just over two decades, car journeys multiplied six-fold, and car-ownership rose from 2.8 million to over 14 million. The Ecology Party is convinced that private car ownership and use should, in principle, be discouraged, and that the public transport system be revitalised and made more attractive both in its efficiency and its cost to the user. In energy terms, the reasons are obvious: the bus is 8 times more efficient in energy than the car, the train 3 times more efficient. A dramatic reduction in car use would also solve many urban environmental problems, such as congestion, lead pollution and noise, and would also enable the public transport system and essential car and van use to be much more efficient. The Ecology Party advocates a general movement of private transport away from the car and towards public transport, and a general movement of freight transport away from the roads and towards the rail and canal networks. The Ecology Party recognises that, for obvious reasons, it is impossible to achieve a complete switch away from the roads, but at the same time it recognises that an increasing pattern of road use cannot continue into a future of rising oil scarcity and cost.

Large savings can, however, be made in the transport sector by improving the efficiency of the car. There is a consensus among engineers that these savings could be dramatic: fuel consumption of the average European car could be reduced by 40-50%. This saving would be produced by many factors, some simple with no, or low, development costs, others needing intensive development along lines already under investigation.

A detailed breakdown of factors is given in "A Low Energy Strategy for the UK", already mentioned. These factors include tyre drag, idling, weight, driving techniques, new transmission techniques and improved engines. Experts from the Transport and Road Research Laboratory, Ford (UK), BL, and Shell agree that, given sufficient incentive, a 50% reduction in fuel consumption is possible by 2025.

Long-term choices for transport fuels are limited — either liquids from coal or organic materials, or battery-stored electricity. Research into both need to be accelerated, but at the moment the sodium-sulphur battery, with its high capacity and non-polluting properties, looks a good prospect. In the short-term, while energy-efficient conventional cars will make a significant contribution to energy saving, it is clear that the largest gains will involve an overall reduction in the use of the car.

4. THE SOLUTION — ALTERNATIVES

Estimates of how long supplies of non-renewable energy resources will last vary greatly. Discoveries of new sources, the point at which their exploitation becomes economic, and the rate of adoption of conservation techniques are all unknown factors. What is beyond doubt is that one day they will run out. The Ecology Party believes that our first responsibility should be to use those resources, while we still have them, as efficiently as possible. At the same time, we must research as urgently as possible all possible alternative options. Detailed examination of the possible energy sources can be found elsewhere*. In general the Ecology Party believes that, using money released from the cancellation of the nuclear programme, adequate research funds should be made available to all the available technologies now. The Ecology Party also believes that future energy supply systems should be small-scale, decentralised, and use the resources available in the region where the power is to be used, for example, wind power in Cornwall, hydro in Scotland and refuse in London. No one enormous egg will fill our energy basket, but many smaller, different coloured and different sized eggs will fill as many baskets as are needed.

The Department of Energy has no great expectations from alternative energy sources — not surprising when 25 years of wind power research have received R & D funds of one day's subsidy to BL. The Department expects "the contribution to be near 10 mtce (by 2000) and very possibly less." But the Select Committee on Science and Technology estimated that we would obtain 15 mtce per year from wave power alone by that date, and Frank Hooley MP has suggested that we should be thinking in terms of 100 mtce by 2000 from all renewable sources.

Research into all kinds of alternative energy technology is being starved of funds. The Ecology Party recognises that these technologies will be our **only source of energy** in the future. It is obvious that continued profligate exploitation of non-renewable energy sources will result in an energy crisis in the short-term future. It is equally obvious that nuclear power, even if it were acceptable to the public and even if limitless funds were available to it, will not begin to solve that crisis. The **only way** to ensure a stable energy future is to begin, **now**, simultaneous programmes of work on energy efficiency, and research into renewable sources. There is no other option unless it is to allow the dawning of a new Dark Age soon after the turn of the century.

"Soft Energy Paths" by Amory Lovins. Penguin

"Non-nuclear options for the UK" SERA

APPENDIX

ECOLOGY PARTY POLICIES

A selection of policies relating to energy, as passed by Ecology Party conferences.

— To set up a Central Energy Authority to absorb the existing separate boards (Gas, Electricity, Coal, BNOC) as a means of eliminating unnecessary competition for selling energy between the suppliers.

— To set up in each district a District Energy Authority, to plan and implement a long-term rational energy policy most suited to each district, using such local energy resources as are available.

— To use surplus funds from the National Energy Boards to finance a nationwide domestic energy saving policy to be called the National Home Insulation Scheme. Interest-free loans would be administered by the District Energy Authorities through the existing quarterly billing system.

— A National Resources Tax would be introduced, to be levied on all non-renewable forms of energy and selected raw materials at the extraction, primary production or import stage. Thereby all goods would be taxed according to their energy consumption levels, and the recycling of materials and energy encouraged.

— Each District Energy Authority to set up local energy use centres, staffed by trained energy advisors, to advise as to the most efficient fuel for each purpose, and on conservation measures in all areas of domestic and industrial use.

— The District Energy Authorities would be expected to propose whole city heating strategies, including combined heat and power stations, to make use of the waste heat produced when electricity is generated.

— To publish a National Energy Index, giving per capita consumption of energy excluding renewable sources, and through publicity, watch for decreases in the index.

— The role of the UK Atomic Energy Authority would be adjusted so that its function is to:

- (i) close down existing nuclear power stations as fast as is practicable,
- (ii) solve the problems of managing nuclear waste and decommissioning nuclear power stations.

— Each District Energy Authority to apply existing information and promote research to develop and use the renewable sources of energy in its own area, according to district needs.

Energy use depends on society's method of production, distribution and consumption. The Ecology Party's policies for more labour-intensive production, smaller-scale industry and more localised production for local needs are outlined in our pamphlet **Working for a Future** (see opposite). Those policies provide the framework for the low-energy society which we envisage.

Further Information about the Ecology Party

The Politics of Ecology (20p)

A full explanation of our philosophy and principles.

The Real Alternative (25p)

A short manifesto of the Party's policies.

The Reckoning (25p)

A comparison between our policies and those of other parties.

How to Survive the Nuclear Age (80p)

A major pamphlet on Civil Defence and disarmament.

Nuclear Disarmament and Beyond (20p)

Ecology Party Defence Policy Paper No. 1

Working for a Future (£1.00)

An ecological approach to employment

Jobs for Keeps (25p)

A radical policy for employment.

Please add 20p for postage and packing.

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